



Does The Layer Farmers' Characteristics Influence their Happiness Index and Quality of Life?

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Abstract. A happiness index is a metric that aims to measure the overall well-being and happiness of individuals within a population. The aim of this study is to explore how farmers' happiness index and quality of life can be influenced by farmers' education background and flock size. The sample consisted of 100 layer farmers living in Blitar Regency. Data obtained during interviews with farmers were used. The data were statistically analyzed using the Structural Equation Model (SEM) method to explore the correlation between farmers' characteristics and farmers' happiness, mediated by their quality of life. The result showed that the higher the level of farmers' education background the higher their level of happiness. A high level of happiness is also influenced by the good quality of life of the farmers. Therefore, it can be concluded that the farmers' characteristics play an important role on farmers' happiness index and quality of life.

Keywords: Happiness index, Layer farmer, Quality of life.

1 Introduction

The agricultural sector plays a vital role in the economies of many countries worldwide. Within this sector, small-scale poultry farming contributes approximately 8% of global egg production, particularly in regions such as Europe, South Asia, Sub-Saharan Africa, East Asia, Latin America, and the Caribbean [1]. Despite their substantial contributions, poultry farmers often face various challenges that may compromise their well-being, including demanding work schedules [2], high poultry feed costs [3], limited regeneration of the workforce [3], and inefficient supply chain management [4].

While numerous studies have examined the economic and operational challenges in agriculture, relatively few have focused on the subjective well-being of farmers—particularly their happiness and quality of life. The Happiness Index, which incorporates both tangible indicators (e.g., GDP, life expectancy, and social support) and intangible elements (e.g., life satisfaction and emotional well-being), has gained increasing relevance as a measure of societal health and productivity [5]. According to Veenhoven's psychological theory (1984, p. 22), happiness is defined as an individual's subjective

assessment of life based on personal preferences, encompassing both feelings and beliefs. Research suggests that factors such as income, health, and education significantly affect life satisfaction [6]. However, in the context of the Indonesian livestock sector specifically among layer farmers there is limited empirical evidence exploring how farmer characteristics, such as education level and flock size, influence the Happiness Index, particularly when mediated by quality of life. This gap is especially critical, considering the increasing pressure on farmers to adapt to economic and environmental challenges.

This study aims to address that gap by investigating the relationship between farmer characteristics and their Happiness Index, with quality of life as a mediating variable. Layer farming, which involves raising chickens primarily for egg production, requires both technical expertise and sound management. Understanding how personal and operational attributes impact well-being can inform policies that promote sustainable agriculture and rural resilience. The contributions of this study are threefold. First, it enriches the existing literature on the interplay between farmer characteristics, quality of life, and subjective well-being. Second, it provides practical insights to help layer farmers improve their quality of life and overall happiness despite ongoing business challenges. Finally, it offers a foundation for further research into psychological well-being in the agricultural sector, particularly in developing economies like Indonesia.

2 Research Method

2.1 Measurement of Research Variables

The dependent variable in this study is the Happiness Index, measured using four statement items derived from previous studies. These items include: (1) farmers feel optimistic about the future, (2) farmers feel committed and engaged with life, (3) farmers feel their life is going well, and (4) farmers are satisfied with their life.

In addition to the dependent variable, quality of life is included as an intervening variable. This variable is expected to mediate the relationship between the independent variables (farmer characteristics) and the dependent variable (Happiness Index), serving as a bridge that explains the mechanism of influence.

All variables were measured using a Likert-scale questionnaire, with responses ranging from 1 (“strongly disagree”) to 5 (“strongly agree”).

2.2 Sampling

This study aims to explore the influence of farmer characteristics on the Happiness Index, mediated by quality of life, specifically in the context of layer poultry farmers. The research was conducted over a one-month period, from August to September 2024, in Blitar Regency, East Java—a region known for its significant poultry population, which reached 15,926,411 in 2023 (<https://blitarkab.bps.go.id/id/statistics-table/2/MTU4IzI=/poultry-population-by-type-and-district.html>).

The target population for this study includes active layer poultry farmers in Blitar. Purposive sampling was employed to ensure the selection of respondents who met specific criteria: they must (1) be actively engaged in layer poultry farming, (2) manage their own flocks, and (3) have been involved in poultry farming for at least one year. These criteria were chosen to ensure the respondents' familiarity with the farming context and their capacity to reflect on their quality of life and happiness meaningfully.

2.3 Analysis Techniques

Data were analyzed using Structural Equation Modeling (SEM). SEM was chosen because it allows for simultaneous analysis of complex relationships among multiple variables, including both direct and indirect effects. This is particularly suitable for the research model, which includes a mediating (intervening) variable—quality of life—between the independent variables (farmer characteristics) and the dependent variable (Happiness Index). SEM also enables the testing of latent variables through observed indicators, offering a more robust and comprehensive understanding of the constructs being measured in social science research.

3 Empirical Result

3.1 Analysis of Validity and Realibility

Based on the outer model testing revealed that the items comprising the construct demonstrate valid a realible contributions. Following the minimum standards advised by experts in multivariate SEM quantitative analysis, the minimum Average Variance Extracted (AVE) should be 0.6, while the minimum values for Composite Reliability (CA) and Cronbach's Alpha (CR) should each be at least 0.7. Additionally, the minimum Loading Factor value is set at 0.7.

3.2 Structural Measurement Model

In the internal model testing, the result indicates that hypothesis 1 was accepted with a t-value of 7.581, hypothesis 2 was accepted with a t-value 3.431, hypothesis 3 was accepted and giving a significant different with a t-value 34.971, and hypothesis 4 was accepted with a t-value 7.268. This suggest that farmers' characteristic positively influenced farmer's happiness index and quality of life. Below are the results from the hypothesis testing.

Table 1. Validity and Reliability Test of Constructs

Construct	Item	Loading	CA*	CR*	AVE*
Characteristic	X		0.741	0.884	0.793
Educational background	X1	0.869			
Flock size	X2	0.911			
Quality of Life	Y		0.837	0.891	0.671
Layer farming has reduced pollution levels in my area.	Y1	0.797			
Layer farming has increased my economic activities.	Y2	0.823			
Layer farming has improved my healthcare facilities.	Y3	0.821			
Layer farming has made my access to schools and public places easier.	Y4	0.835			
Happiness Index	Z		0.770	0.853	0.592
I feel optimistic about my future.	Z1	0.839			
I consistently committed and engaged.	Z2	0.768			
My life is going well.	Z3	0.740			
I am satisfied with whatever I have in my life.	Z4	0.727			

* CA : Cronbach's Alpha, CR : Composite Reliability, AVE : Average Variance Extracted.

Table 2. Structural Model Hypothesis Testing Results

Hypothesis	Relationship	STDEV	t-value	p-value	Decision
H1	C > QoL	0.067	8.041	0.000	Yes
H2	C > HI	0.039	3.357	0.001	Yes
H3	QoL > HI	0.030	29.989	0.000	Yes
H4	C > QoL > HI	0.061	7.824	0.000	Yes

4 Discussion

This study investigated the influence of farmer characteristics specifically education level and flock size on the Happiness Index, with quality of life serving as a mediating variable. The findings reveal that both education and flock size positively affect the Happiness Index. In this context, flock size is interpreted as a proxy for household income or farm assets, which are closely tied to the financial stability of the farmer. Descriptive data show that 1% of farmers had no formal education, 4% had completed elementary education, 46% had middle school education, 28% had high school education, and 21% had obtained a diploma or bachelor’s degree. In terms of flock size, no

farmers had fewer than 100 chickens; 8% had flocks of 101–1,000, 27% had 1,001–5,000, 47% had 5,000–10,000, and 18% had more than 10,000 chickens.

The first key finding indicates that farmer characteristics, particularly higher education and larger flock size, have a positive and significant effect on the Happiness Index. This aligns with prior studies suggesting that increased income often a result of larger farm scale correlates with higher levels of happiness. For example, every increase in flock size tends to be followed by a corresponding increase in net income [7], which supports the observed positive relationship between flock size and happiness. This result is further supported by a study in Ghana, which found that farmers' assets, including flock size, contribute positively to their happiness levels [8]. In a similar vein, education equips farmers with better knowledge and management practices, leading to higher productivity and satisfaction. Previous research has emphasized that education and farming skills significantly affect farmers' satisfaction and happiness [9]. Thus, both material (flock size) and non-material (education) assets reinforce the happiness of farmers by enhancing their capabilities and livelihood outcomes.

The second finding reveals a positive relationship between farmer characteristics and quality of life. Education, in particular, is a widely recognized dimension of quality of life, as identified by the United Nations Human Development Programme (UNHDP). Educational attainment influences employment quality and income level, which are crucial determinants of living standards [10]. Educated farmers are generally more capable of implementing effective farming techniques and adapting to technological innovations [11], which improves efficiency and profitability. Increased profits can translate into improvements in various life domains such as healthcare access, education for children, family leisure activities, and nutritional intake all of which are key indicators within the quality of life framework [12]. Therefore, this study's findings confirm earlier research that views education as a catalyst for enhancing both economic and social aspects of rural life.

The third result shows that quality of life positively influences the Happiness Index, serving as a mediator between farmer characteristics and happiness. This is consistent with previous research [13], which highlights that objective indicators of quality of life including environmental conditions, access to public services, and income levels can enhance subjective well-being and life satisfaction. However, it is worth noting that the relationship between quality of life and happiness is not always linear. While many studies suggest a strong positive correlation, some research has shown divergence. For instance, [14] concludes that although quality of life and happiness are often correlated, individuals with high objective living standards may still report low happiness levels due to psychological or emotional factors. This emphasizes that while quality of life can foster happiness, it does not wholly determine it.

The mediating role of quality of life is further emphasized in this study. Although farmer characteristics directly affect happiness, their impact is significantly strengthened when mediated by quality of life. In essence, better farmer characteristics such as higher education and larger flock size lead to improved quality of life, which subsequently enhances the farmer's happiness. This model aligns with holistic approaches in rural development, where both material conditions and life satisfaction are seen as essential for sustainable agricultural livelihoods. Theoretical contribution.

4.1 Limitation

This study is limited to the research of layer farmers in Blitar, East Java. Furthermore, this research has not yet captured the complete dimensions of the farmers' Happiness Index and quality of life, as demonstrated by previous studies that incorporate broader social, psychological, and environmental indicators. However, the findings support and expand upon Veenhoven's psychological theory of happiness (1984), which defines happiness as individuals' subjective evaluation of their life quality based on personal preferences and perceived well-being. By empirically linking farmer characteristics (education and flock size) to both quality of life and the Happiness Index, this study contributes to existing frameworks by illustrating the mediating role of quality of life in the context of rural agricultural livelihoods—an area that remains underexplored, particularly within the Indonesian livestock sector. These results also complement development literature emphasizing that objective indicators (such as income and assets) and subjective well-being are interrelated components in assessing rural welfare.

5 Conclusion

Characteristics of layer farmers give an influence on the farmers' happiness index and quality of life.

Disclosure of Interests. The authors have no competing interests to declare that are relevant to the content of this article.

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